

Message Text

UNCLASSIFIED

PAGE 01 TOKYO 18133 091013Z

42

ACTION OES-06

INFO OCT-01 EA-09 ISO-00 HEW-06 CIAE-00 DODE-00 INR-07
NSAE-00 PA-02 USIA-15 PRS-01 SP-02 EB-07 COME-00 /056 W
----- 056233

R 090903Z DEC 76

FM AMEMBASSY TOKYO

TO SECSTATE WASHDC 4100

UNCLAS TOKYO 18133

FOR OES/APT/BMP, WILLIAM WALSH

DEPT PASS TO DHEW/RSA

E.O. 11652: N/A

TAGS: TBIO, TECH, JA

SUBJECT: PROSTHETIC DEVICES FOR THE PHYSICALLY HANDICAPPED

1. SUMMARY: JAPANESE PRESS RECENTLY PLAYED UP REPORTS ON
NEWLY DEVELOPED DEVICES FOR THE PHYSICALLY HANDICAPPED, INCLUDING
AN ARTIFICIAL HAND. ALTHOUGH MOST OF THE DEVICES UNVEILED STILL
REQUIRED IMPROVEMENTS, THEY OFFER PROMISE OF PRACTICAL USE IN NEAR
FUTURE. END SUMMARY.

2. ON NOVEMBER 24, PROF. ICHIRO KATO OF WASEDA UNIVERSITY'S
DEPARTMENT OF SCIENCE AND ENGINEERING AND HIS GROUP ANNOUNCED
DEVELOPMENT OF AN ARTIFICIAL HAND WITH THREE DEGREES OF FREEDOM
(PINCHING, BENDING AND TURNING). THE SYSTEM, WEIGHING 1.5 KG,
CONSISTS OF FINGERS AND WRIST, COMPLETE WITH POWER SOURCE, OIL
PRESSURE PUMP UNIT, AND CONTROL DEVICE. THE HAND IS CONNECTED
TO THE MUSCLES OF FOREARM WITH ELECTRODES. THE ELECTRODES,
SENSING THE MOVEMENTS OF THE ARM'S MUSCLES AT THE WILL OF USER,
RELAY SIGNALS TO THE CONTROL DEVICE WHICH ACTUATES MOTOR AND
TORQUE MAGNIFIER (ROTARY SERVOACTUATOR) TO GENERATE MOVEMENTS
OF FINGERS AND/OR WRIST.

3. THE R&D WORK, FUNDED BY MEDICAL TECHNOLOGY RESEARCH AND
DEVELOPMENT FOUNDATION, WAS PARTICIPATED IN BY TOKYO METROPOLITAN
RESEARCH INSTITUTE ON PROSTHETICS, MITSUBISHI METAL CORPORATION,
AND KAYABA INDUSTRY COMPANY. PROF. KATO HOPES TO COMPLETE THE
UNCLASSIFIED

UNCLASSIFIED

PAGE 02 TOKYO 18133 091013Z

SYSTEM BY END OF NEXT YEAR BY RAISING THE LEVEL OF PERFORMANCE

AND REDUCING SIZE OF SIGNAL PROCESSING PART.

4. ON NOVEMBER 26, ANOTHER RESEARCH TEAM, LED BY PROF. HIROYASU FUNAKUBO OF UNIVERSITY OF TOKYO, UNVEILED A COMPUTER-CONTROLLED ARTIFICIAL ARM WITH SEVEN DEGREES OF FREEDOM COVERING MOVEMENTS OF SHOULDER, ARM, WRIST AND THE FINGERS. THE SYSTEM, WEIGHING ABOUT 1.7 KG, CONSISTS OF SHOULDER, UPPER ARM, FOREARM AND HAND, AS WELL AS THE CONTROL DEVICE (MICRO-COMPUTER) AND POWER SOURCE (10 1.25-VOLT NICKEL-CADMIUM STORAGE BATTERIES). FINGERS, HAND AND ARM ARE MOVED BY A SET OF 11 MOTORS OPERATING AT THE COMMAND OF THE COMPUTER, WHICH HAS MEMORY OF 10 BASIC PATTERNS OF HUMAN MOTIONS. TEAM WILL SPEND TWO MORE YEARS IN IMPROVING THE DEVICE BEFORE PUTTING IT TO PRACTICAL USE. LIKE PROF. KATO OF WASEDA UNIVESITY, PROF. FUNAKUBO IS FACED WITH SAME PROBLEM OF REDUCING SIZE OF COMPUTER. HE AIMS TO REDUCE ITS SIZE TO THAT OF A MEDIUM-SIZE TRANSISTOR RADIO SET.

5. ABOUT 60 SCIENTISTS AND ENGINEERS PARTICIPATED IN THE DEVELOPMENT OF THE DEVICE WITH SUPPORT OF SCIENCE AND TECHNOLOGY AGENCY (STA). MINISTRY OF HEALTH AND WELFARE (MHW) IS IN CHARGE OF PERFORMANCE EVALUATION.

6. A TRIPLE-FUNCTION BED DESIGNED FOR A BED-RIDDEN PATIENT HAS BEEN DEVELOPED BY OKUMURA SANGYO K.K. OF HASHIMOTO, WAKAYAMA PREFECTURE. THE BED HAS MOTOR-DRIVEN DEVICE ENABLING THE PATIENT TO TURN HIS BODY TO AVOID BEDSORES, TO BATHE AND TO DEFECATE. THE LOCAL FIRM CLAIMS THAT THIS WILL BE FIRST VERSATILE BED FOR THE BED-RIDDEN WHICH REQUIRES NO MORE THAN ONE ATTENDANT WHEN TAKING A BATH. WITH AID OF SPECIALLY DESIGNED BELT, THE PATIENT CAN DEFECATE WHILE IN SUPINT POSITION. THE BED IS MADE IN FOUR STYLES: ONE FOR THE SLIGHTLY ILL, ONE FOR THE SERIOUSLY ILL, ONE FOR MANUAL OPERATION, ONE FOR JAPANESE STYLE ROOM. THE AVERAGE PRICE OF THE BEDS IS REPORTEDLY YEN 350,000 (ABOUT DOLLARS 1,170). EMBASSY HAS OBTAINED SALES CATALOGUE AND WILL FORWARD IT IF REQUESTED.

7. VISITORS TO AN EXHIBITION OF "SOCIAL WELFARE DEVICES" HELD IN TOKYO RECENTLY UNDER JOINT SPONSORSHIP OF MHW AND NATIONAL SOCIAL WELFARE ASSOCIATION WERE DISAPPOINTED AT UNCLASSIFIED

UNCLASSIFIED

PAGE 03 TOKYO 18133 091013Z

HIGH PRICES OF THE DEVICES. DEVICES PUT ON DISPLAY BY SOME 70 MANUFACTURERS INCLUDED POWER-DRIVEN WHEELCHAIRS (YEN 300,000 - 600,000), SPECIALLY DESIGNED BEDS (LIKE OKUMURA'S), COLLAPSIBLE BATHTUB, PORTABLE STOOLS, BEDDING AND TABLEWARE. A FEATURE OF THE EXHIBITION, A MODEL ROOM FOR THE AGED AND/OR THE HANDICAPPED, COSTS MORE THAN YEN 5 MILLION. EXPENSIVENESS IS PRIMARILY DUE TO LIMITED DEMAND WHICH MAKES MASS PRODUCTION INFEASIBLE. ANOTHER REASON IS

SAID TO BE COST OF PURCHASING KNOWHOW FROM ABROAD. MHW FUNDS
RESEARCH AND DEVELOPMENT ON PROSTETIC DEVICES BUT NO R&D
MONEY IS AVAILABLE FOR DEVICES AND TOOLS FOR DAILY LIVING.
HODGSON

UNCLASSIFIED

NNN

Message Attributes

Automatic Decaptioning: X
Capture Date: 01 JAN 1994
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: MEDICAL CARE, EQUIPMENT, PRESS COMMENTS, HANDICAPPED WORKERS
Control Number: n/a
Copy: SINGLE
Draft Date: 09 DEC 1976
Decaption Date: 01 JAN 1960
Decaption Note:
Disposition Action: n/a
Disposition Approved on Date:
Disposition Authority: n/a
Disposition Case Number: n/a
Disposition Comment:
Disposition Date: 01 JAN 1960
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1976TOKYO18133
Document Source: CORE
Document Unique ID: 00
Drafter: n/a
Enclosure: n/a
Executive Order: N/A
Errors: N/A
Film Number: D760455-0274
From: TOKYO
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1976/newtext/t19761256/aaaabwoo.tel
Line Count: 119
Locator: TEXT ON-LINE, ON MICROFILM
Office: ACTION OES
Original Classification: UNCLASSIFIED
Original Handling Restrictions: n/a
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 3
Previous Channel Indicators: n/a
Previous Classification: n/a
Previous Handling Restrictions: n/a
Reference: n/a
Review Action: RELEASED, APPROVED
Review Authority: wolfsd
Review Comment: n/a
Review Content Flags:
Review Date: 04 JUN 2004
Review Event:
Review Exemptions: n/a
Review History: RELEASED <04 JUN 2004 by hattaycs>; APPROVED <03 AUG 2004 by wolfsd>
Review Markings:

Margaret P. Grafeld
Declassified/Released
US Department of State
EO Systematic Review
04 MAY 2006

Review Media Identifier:
Review Referrals: n/a
Review Release Date: n/a
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
Secure: OPEN
Status: NATIVE
Subject: PROSTHETIC DEVICES FOR THE PHYSICALLY HANDICAPPED
TAGS: TBIO, TECH, JA, (KATO, ICHIRO)
To: STATE
Type: TE
Markings: Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006